

User's Manual

PM-8 DRAGONFLY

8-CHANNEL MIXING CONSOLE
WITH DIGITAL EFFECTS



www.altoproaudio.com
Version 1.2 Septembre 2005
— English —

SAFETY RELATED SYMBOLS



This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.



This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.



Protective Ground Terminal



AC mains (Alternating Current)



Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.

CAUTION

Describes precautions that should be observed to prevent damage to the product.



Disposing of this product should not be placed in municipal waste and should be Separate collection.

WARNING

• Power Supply

Ensure that the mains source voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user.

Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

• External Connection

Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

• Do Not Remove Any Covers

Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed.

Covers should be removed by qualified service personnel only.

No user serviceable parts inside.

• Fuse

To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

• Protective Ground

Before turning the product ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

Never cut internal or external Ground wires. Likewise, never remove Ground wiring from the Protective Ground Terminal.

• Operating Conditions

Always install in accordance with the manufacturer's instructions.

To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture. Do not use this product when in close proximity to water.

Do not install this product near any direct heat source. Do not block areas of ventilation. Failure to do so could result in fire.

Keep product away from naked flames.

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions

Follow all instructions

Keep these instructions. Do not discard.

Heed all warnings.

Only use attachments/accessories specified by the manufacturer.

• Power Cord and Plug

Do not tamper with the power cord or plug. These are designed for your safety.

Do not remove Ground connections!

If the plug does not fit your AC outlet seek advice from a qualified electrician.

Protect the power cord and plug from any physical stress to avoid risk of electric shock.

Do not place heavy objects on the power cord. This could cause electric shock or fire.

• Cleaning

When required, either blow off dust from the product or use a dry cloth.

Do not use any solvents such as Benzol or Alcohol. For safety, keep product clean and free from dust.

• Servicing

Refer all servicing to qualified service personnel only.

Do not perform any servicing other than those instructions contained within the User's Manual.

PREFACE

Dear Customer:

Thanks for choosing ▲LTO PM-8 DRAGONFLY 8-Channel Mixing Console With Digital Effects ,which is the results of ▲LTO AUDIO TEAM's work and researches.

For the ▲LTO AUDIO TEAM, music and audio are more than a profession, it is a passion and an obsession!

We have, in fact, been designing professional audio products for a number of years in cooperation with many of the world's major brands.

The ▲LTO line represents unparalleled analogue and digital products made by musicians, for musicians. With our design centres in Italy, the Netherlands, and the United Kingdom we provide you with world-class designs, while our software development teams continue to develop an impressive range of audio specific algorithms.

By purchasing our ▲LTO products you become the most important member of our ▲LTO AUDIO TEAM. We would like to share with you our passion for what we design and invite you to make suggestions, which will aid us in developing future products for you. We guarantee you our commitment for quality, continual research and development, and of course the best prices.

The ▲LTO PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects has 4 mono (these are provided with Ultra Low Noise microphone preamplifiers and Phantom Power at +18 Volt) and 2 stereo input channels, and each of them is provided with a 3 bands graphic equalizer for HI, MID and LOW controls. It is specifically designed for professional appliance. Besides, the PM-8 is also equipped with the miraculous 24-bit digital stereo effect processor with 256 presets and a digital power amplifier. Seeing is believing, let's meet the ▲LTO PM-8 DRAGONFLY.

We would like to thank all the people who made the ▲LTO PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects possible, especially to our designers and ▲LTO staff. It is their passion for music and professional audio that has made it possible for us to offer you, our most important team member, our continued support.

Thank you very much
▲LTO AUDIO TEAM

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1. INTRODUCTION

Thank you very much for expressing your confidence in ▲LTO products by purchasing ▲LTO PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects. The PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects is a professional compact mixer, which provides the state of the art digital amplifier technology specifically. You will get the smooth, accurate more natural and open sound from this apparatus, And it is really ideal for small gigs, recording and fixed PA installations.

The PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects is packed with features that can not be found in other consoles of its size: 4 mono (these are provided with Ultra Low Noise microphone preamplifiers and Phantom Power at +18 Volt) and 2 stereo input channels, and each of them is provided with a 3 bands graphic equaliser for HI, MID and LOW controls; 24-bit effects processor; 256 effects (16 presets × 16 variations); 2 AUX sends with separate level control on each channel; highly accurate 12-segment bar graph meters and ultra low noise discrete MIC pre-amps with +18V Phantom power and 2-Track inputs assignable to main mix, control room / phone outputs.

Your PM-8 DRAGONFLY is very easy to operate but we advise you to go through each Section of this Manual carefully. In this way you will get the best out of your PM-8 DRAGONFLY .

2. FEATURES

The PM-8 DRAGONFLY 8-Channel Mixing Console with Digital Effects is designed for professional appliance. It will provide the following features:

- 5 MIC input channels with gold plated XLRs and balanced LINE inputs
- 2 stereo input channels with balanced TRS jacks
- Ultra-low noise discrete MIC pre-amps with +18V Phantom power
- Extremely high headroom offering more dynamic range
- Balanced inputs for highest signal integrity
- Warm, natural 3-band EQ on each channel
- 24 bit digital effects processor
- 256 effects (16 presets × 16 variations)
- Effect on/off by means of MUTE switch or a footswitch connected to the DFX FOOTSWITCH
- Switch-able Low-cut filter on each mono channel
- Peak LED on each channel
- AUX send 2 switch-able to PRE/POST fader
- AUX send 1/2 per channel for external effects and monitoring
- Control room and phone outputs
- 2-Track inputs assignable to main mix, control room / phone outputs
- Highly accurate 12-segment bar graph meters
- Inserts on MIC channels
- Insert on each of mono input channel
- DYNAMIC POWER: 2x480W @4Ohm

3. READY TO START

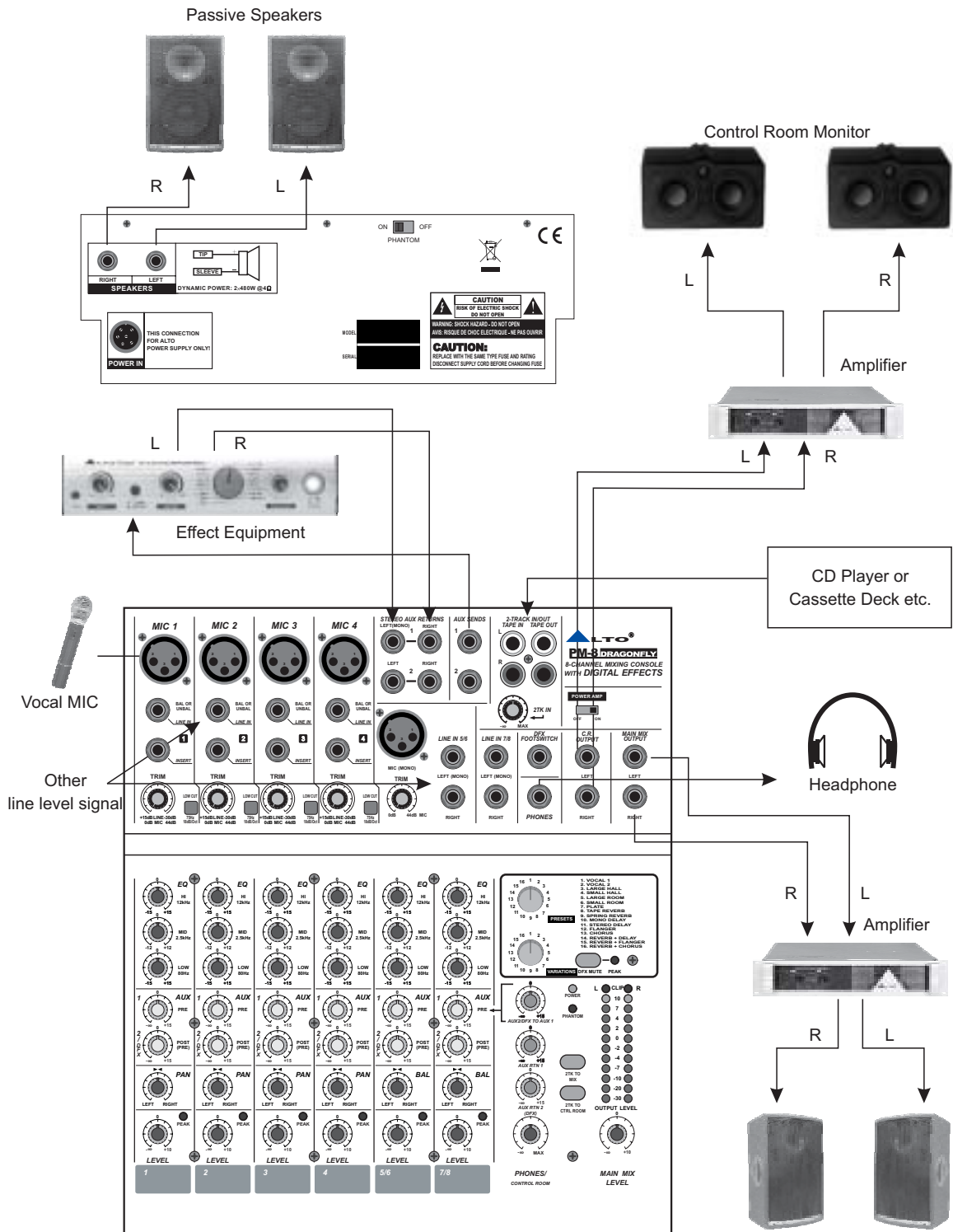
3.1 There is a small black box provided with your PM-8 DRAGONFLY. This is the specific power supply box. Connect the proper terminal into your PM-8 DRAGONFLY and the power supply box into an AC socket.

3.2 Be sure that the main power switch is turned off before connecting the Mixer to the power supply box. Also, you should make sure that all Input and Output Controls are turned down. This will avoid damages to your speakers and avoid excessive noise.

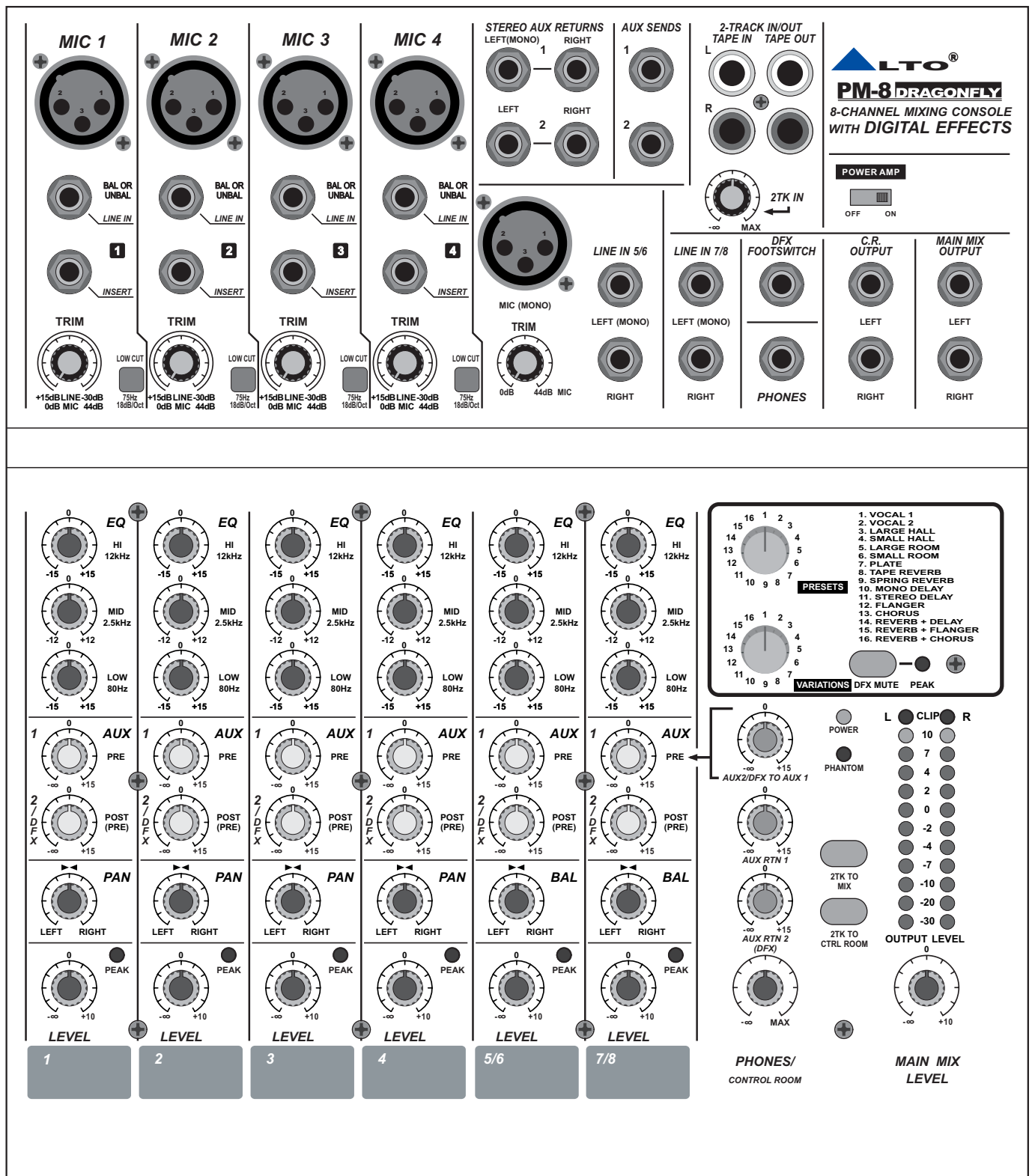
3.3 Before connecting and disconnecting the power supply box always turn off your external power amplifier (if used in a sound system).

3.4 Do not use solvents to clean your PM-8 DRAGONFLY. A dry and clean cloth will be OK.

3.5 Possible system connection mode for Live Sound Application.



4. CONTROL ELEMENTS



4.1 The MONO MIC/LINE channels 1

These are Channel 1 through Channel 4. You can connect a balanced, low impedance microphone to the XLR socket. On the 1/4" phone jack you can connect either a microphone or a line level instrument. You shall never connect an unbalanced microphone to the XLR socket if you do not want to damage both the Microphone and the Mixer, when Phantom power is switched on.

18 Volt phantom power 5

It is available only to the XLR Mic sockets. Do not connect non-phantom equipment to the MIC input when phantom power is on. Before turning phantom power on, make sure that all faders are all the way down. In this way you will protect your stage monitors and main loudspeakers.

4.2 MONO CHANNEL INSERT 2

Insert sockets are provided for all mono MIC channels. It can allow you patch external signal processing devices into signal path via a TRS connector, the signal will be taken out after the input gain control (TRIM), and sent to an external processor such as a compressor- limiter, then returned into the same channel immediately before the EQ section.

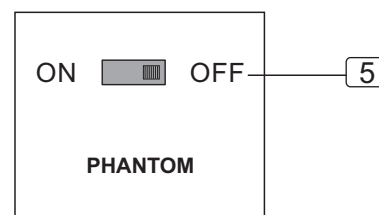
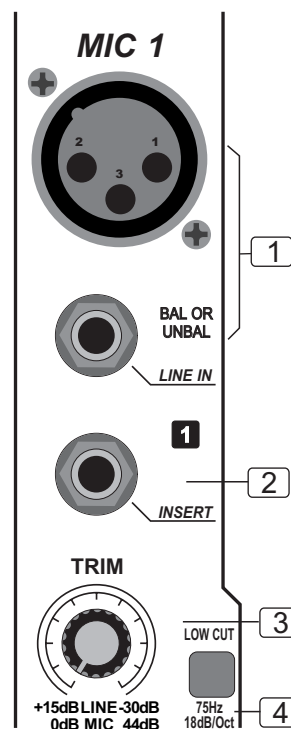
Note: Usually, insert connections require a special stereo-splitting Y-cord to be connected, known as TRS connector (Tip Send/Ring Return).

4.3 INPUT LEVEL setting 3

This Control is provided with 2 different indication rings: One is for the Microphone and the other for the Line levels. When you use a microphone you shall read the OUTSIDE ring (0-44 dB), When you use a Line level instrument you shall read the INSIDE ring (+15~-30 dB). For optimum operation you shall set this control in a way that the peak LED will blink also occasionally in order to avoid distortion on the input channel.

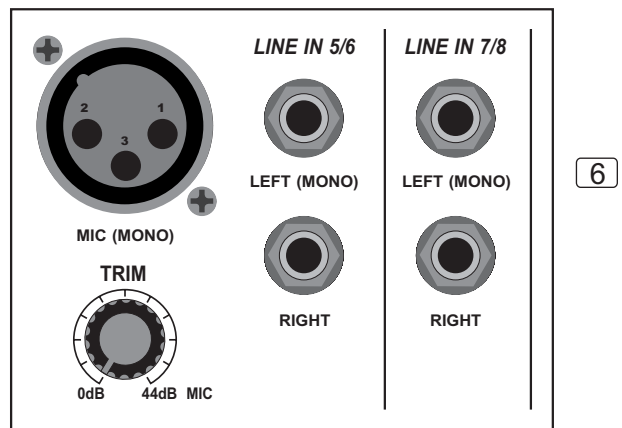
4.4 LOW-CUT FILTER 4

By pressing this button you will activate a 75 Hz low frequency filter with a slope of 18 dB per octave. You can use this function to reduce hum and stage rumble when using microphones.



4.5 STEREO INPUTS 6

These are Channel 5 through 8. They are organised in stereo pair and are provided with 1/4" TRS phone sockets (Channel 5-6 also provide with Mic input and Trim control). If you connect only the left jack, the input will operate in mono mode.



4.6 The 3 BANDS EQUALISER

A 3-band equaliser is provided for all input channels with a wide range of frequency adjustment.

4.6.1 HI 7

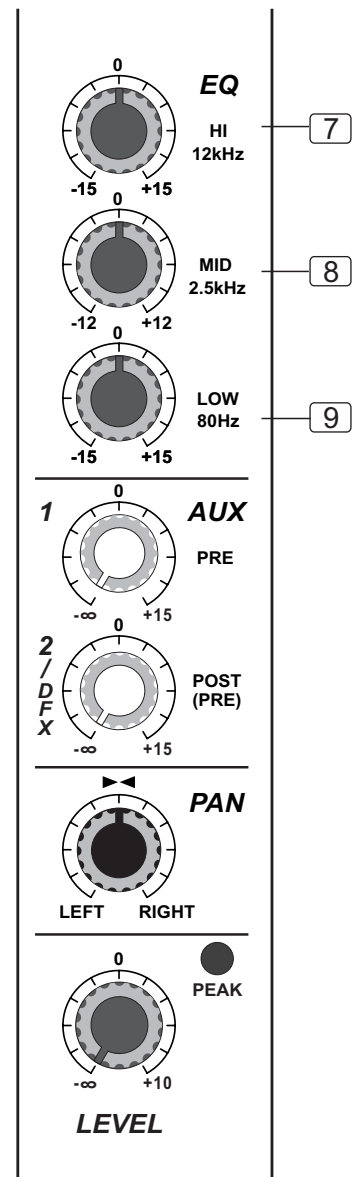
This is the Treble control. You can use it to get rid of high frequency noises or to boost the sound of cymbals or the high harmonics of the human voice. The gain range goes from -15dB to +15dB with a center frequency of 12 kHz.

4.6.2 MID 8

This is the Midrange control. It can affect most fundamental frequencies of all musical instruments and human voice. An attentive use of this control will give you any very wide panorama of sound effects. The gain range goes from -12dB to +12dB and the center frequency is 2.5 kHz.

4.6.3 LOW 9

This is the Bass control. Boost male voice or kickdrum and bass guitar. Your system will sound much bigger than what it is. The gain range goes from -15dB to +15dB and the center frequency is 80 Hz.



4.7 AUX SEND 10

These two controls are used to adjust the level of the signal sent to AUX buses, and their adjustable range goes from - ∞ to +15dB.

AUX1 is configured as PRE-FADER, so, generally, it can be used for monitor application.

While AUX2 is configured as POST-FADER, therefore, most of the times, it will be used for effects and processors input, however, you can also change it to PRE-FADER configuration according to the specific application. (For more detail, please refer to chapter 6.)

In this typical compact unit, excluding sending out directly to the external effect or processor equipment, AUX SEND2 will also be sent to the internal onboard effect module.

4.8 PAN 11

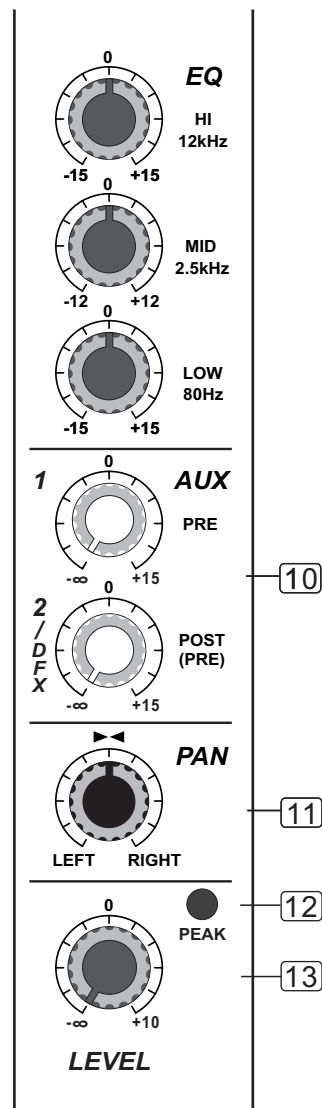
This is the PANORAMA control, or balance control. You can adjust the stereo image of the signal via this Control. Keep this control in center position and your signal will be positioned in the middle of stage. Turn this control fully counterclockwise and the signal will be present only on the left speaker and vice-versa. Of course a wide number of intermediate positions is available.

4.9 PEAK 12

Inside your PM-8 DRAGONFLY the audio signal is monitored in several different stages and then sent to the PEAK Led. When this Led blinks, it warns you that you are reaching signal saturation and possible distortion. The PEAK Led will blink with a level that is 6dB before actual clipping.

4.10 LEVEL 13

This Control will adjust the overall level of this channel and set the amount of signal sent to the Main output.



4.11 MASTER SECTION

- MAIN MIX LEVEL 14

This Control sets the amount of signal sent either to the Main Out socket or to the Tape Output.

- LED METER 15

This stereo 12 segments Led Meter will indicate the level of the overall output signal.

- 2 TRACK signal path 16

If you push down the 2TK TO CONTROL ROOM button, the 2 TRACK IN signal will be routed into the Control Room output and the level will be adjusted by the Control Room knob nearby the Main MIX LEVEL knob.

If you push the 2TK TO MIX button the 2 TRACK IN signal will be routed into the MAIN output and will be adjusted by the MAIN MIX LEVEL knob.

- AUX RETURN 17

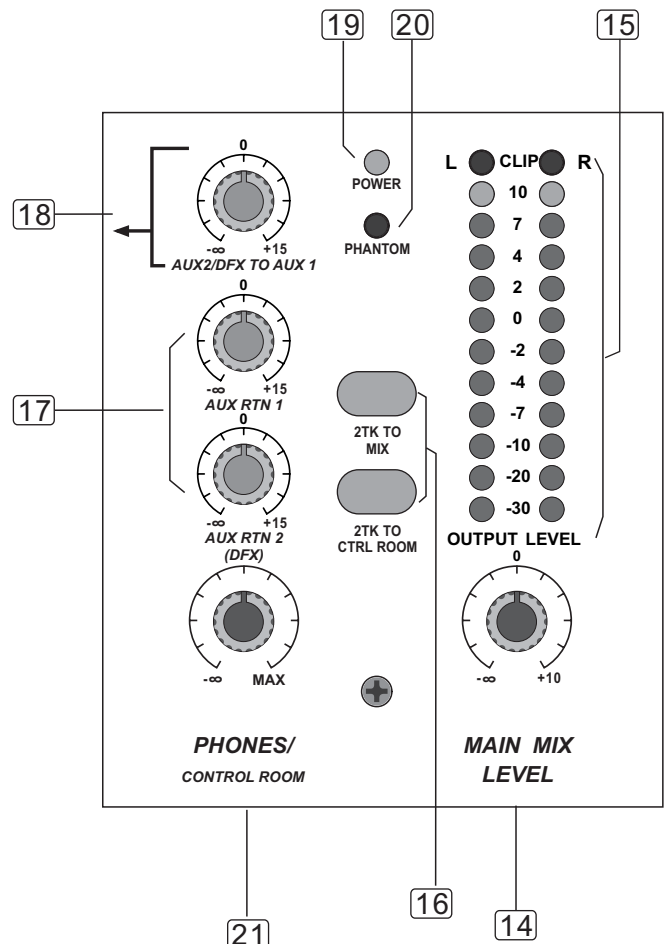
As implied in the name, the Auxiliary Returns are used to 'return' the signal from the external effects or processors to the main mix, but, most of the times, it can also be worked as the additional stereo line inputs.

In this typical compact unit:

AUX RETURN1 is configured to be assigned to the main mix bus permanently, for mono application, only use the left input jack.

But for AUX RETURN2, instead of assigning the returned signal to main mix bus, it can also to AUX1 bus, and in this case, adjust AUX2/DFX TO AUX1 knob (18) to control the input level.

Normally, AUX RETURN2 is connected rightly with the output of the internal digital effects, but, this signal flow will be broken, if you have any external signal inserted from these two jacks.



- POWER LED 19

This LED indicates when the Power is on in your PM-8 DRAGONFLY.

- PHANTOM LED 20

This LED indicates when the Phantom Power is switched on.

- PHONES/CONTROL ROOM 21

This Control sets the amount of signal sent to the Control Room and phone.

- 24 BIT DIGITAL EFFECTS

PRESETS

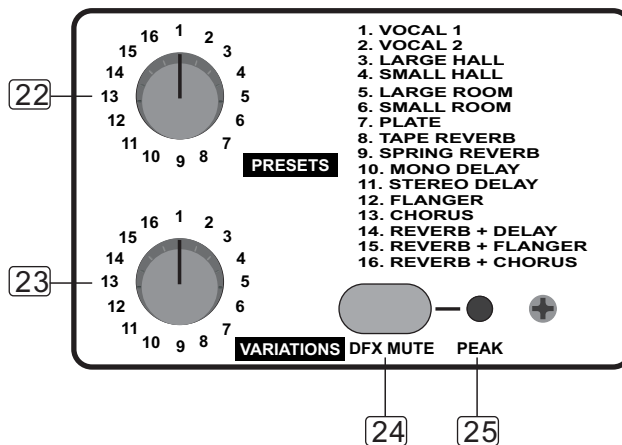
[22]

Adjust this knob to select the right effect you wish to perform. There are total 16 options for you: several kinds of reverb, mono and stereo delay, effects with modulation, and versatile two-effect combination.

VARIATIONS

[23]

Since you have selected the preferable effect, the next step, please go with the fine consideration, there are also total 16 variations for each preset, each variation may be managed by several different factors.



MUTE SWITCH

[24]

This switch is used to activate/deactivate the effect facility. Sometimes, you can also use the DFX FOOTSWITCH for convenient operation.

PEAK LED

[25]

This LED lights up when the input signal is too strong. In case of the digital effect module being muted, this LED also lights up.

- DFX FOOTSWITCH

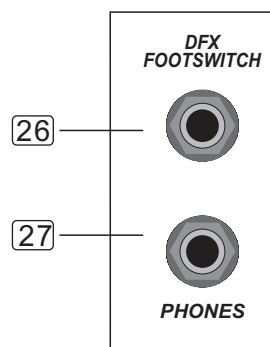
[26]

This 1/4" phone jack can be used to connect an external footswitch to turn on/off the onboard effect module.

- PHONES

[27]

This socket will send out the mix signal to a pair of phones.



- STEREO AUX RETURN

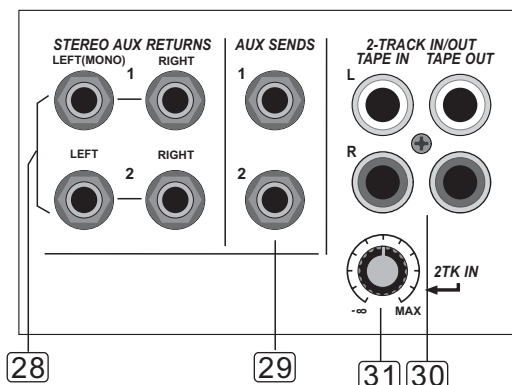
[28]

Use these stereo 1/4" phone socket to return the sound of an effect unit or sound processor to the Main Mix. Alternatively you can use them as an extra auxiliary input.

- AUX SEND

[29]

These 1/4" phone sockets are used to send out the signal from the AUX Bus to external devices such as effect units and/or stage monitors.



- 2-TRACK IN/OUT 30

Input

Use the Tape input if you wish to listen to your Mix from a Tape Recorder or DAT, you can assign the signal coming from the Tape Recorder either to a pair of studio monitor using the Control Room assignment on the front panel or directly to the Main Mix.

Output

These 1/4" TRS sockets will route the main mix into a tape recorder.

- 2TK IN 31

This control is used to adjust the level of 2TK IN.

- POWER AMP 32

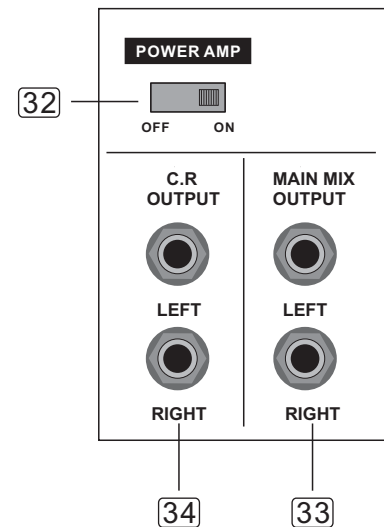
This switch is used to turn ON or OFF the built-in power amplifier.

- MAIN MIX OUTPUT 33

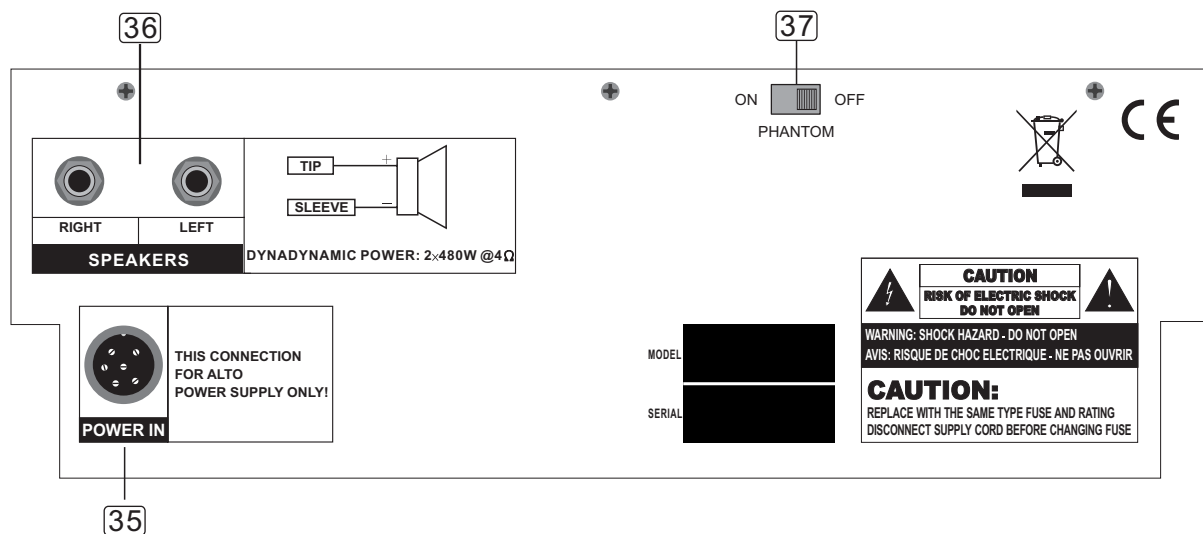
These stereo outputs are supplied with 1/4" jack sockets and controlled by the Main Mix Level. The output level can be varied from $-\infty$ to +10dB.

- CONTROL ROOM OUTPUT 34

These 1/4" phone sockets will be used to send the signal to Studio Monitor speakers or to a second set of PA.



4.12 REAR PANEL



- POWER IN 35

Used to connect the power supply box.

Note: This connection is for Alto power supply box only!

- SPEAKER OUTPUT 36

These 1/4" phone sockets are used to connect passive speakers directly, only these output signals through SPEAKER OUTPUT sockets are amplified by built-in power amplifier.

- PHANTOM 37

This switch will apply +18 Volt Phantom Power only to the 5 XLR microphone Inputs. When these XLR sockets are connected with devices that do not require Phantom Power, please make sure the Phantom Power is turned off, otherwise, this may damage the device and mixer.

4.13 The Power Supply Box

- AC Inlet 38

This is AC Inlet for connecting the AC power supply to the PM-8 power supply box.

- Fuse Holder 39

The fuse is to prevent fire and damage to the product, Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the PM-8 power supply is disconnected from the AC inlet.

Use only the recommended fuse type as indicated.

- POWER Switch 40

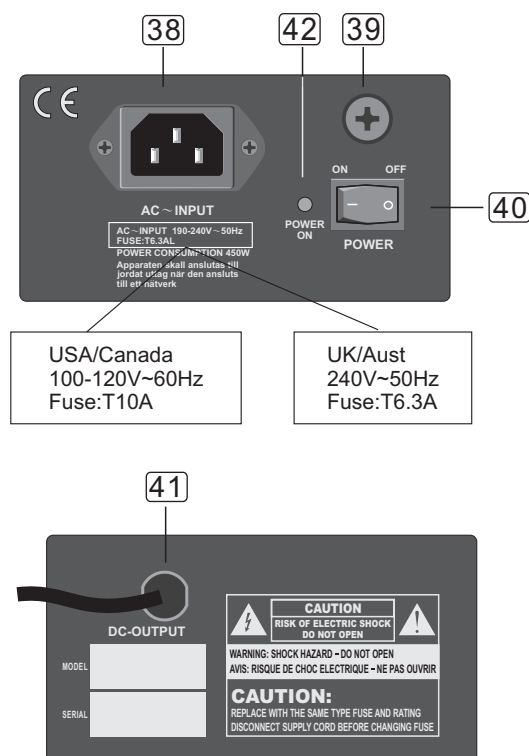
The switch is used to turn the POWER on and off.

-DC-OUTPUT 41

You can connect the cable from DC OUTPUT to POWER IN on rear panel. Thus , the power supply box will provide $\pm 24V$ DC voltage to your mixing console.

POWER LED 42

This LED lights up when the power is turned on.



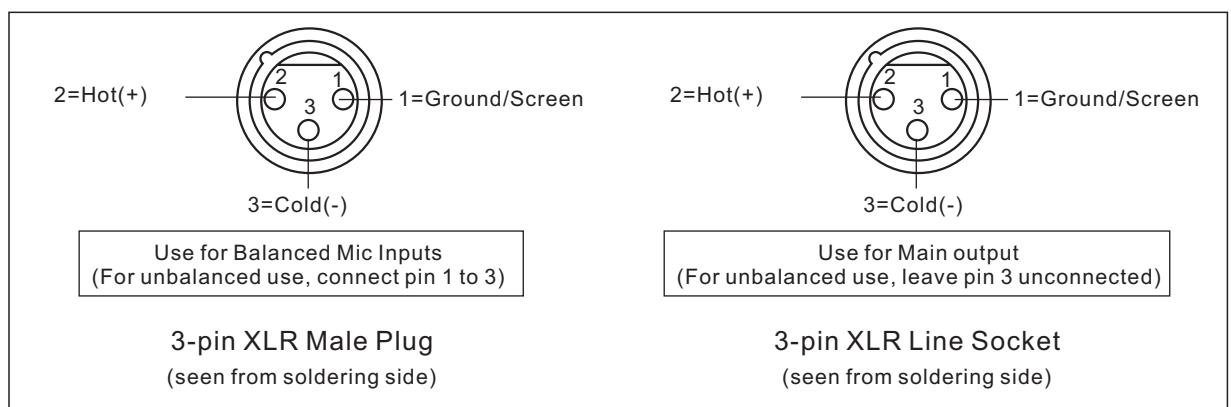
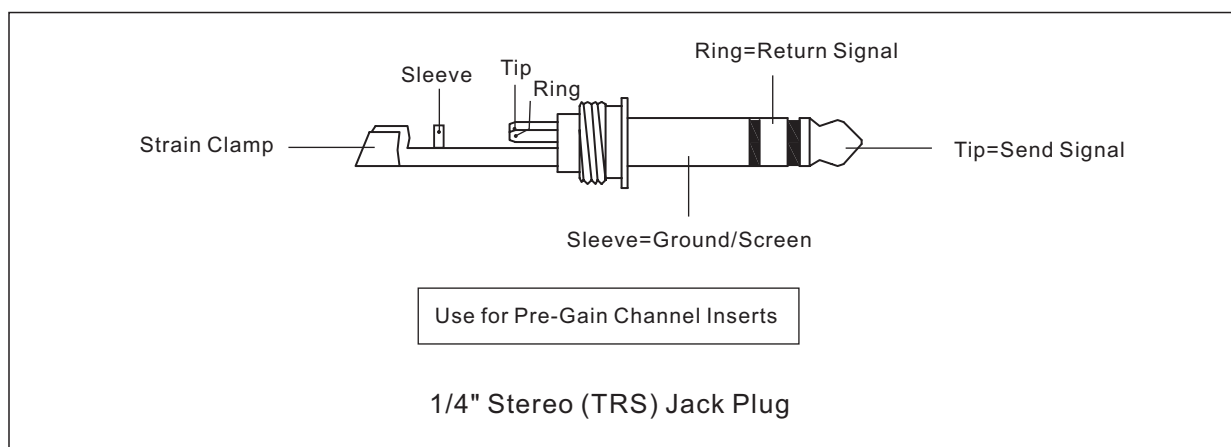
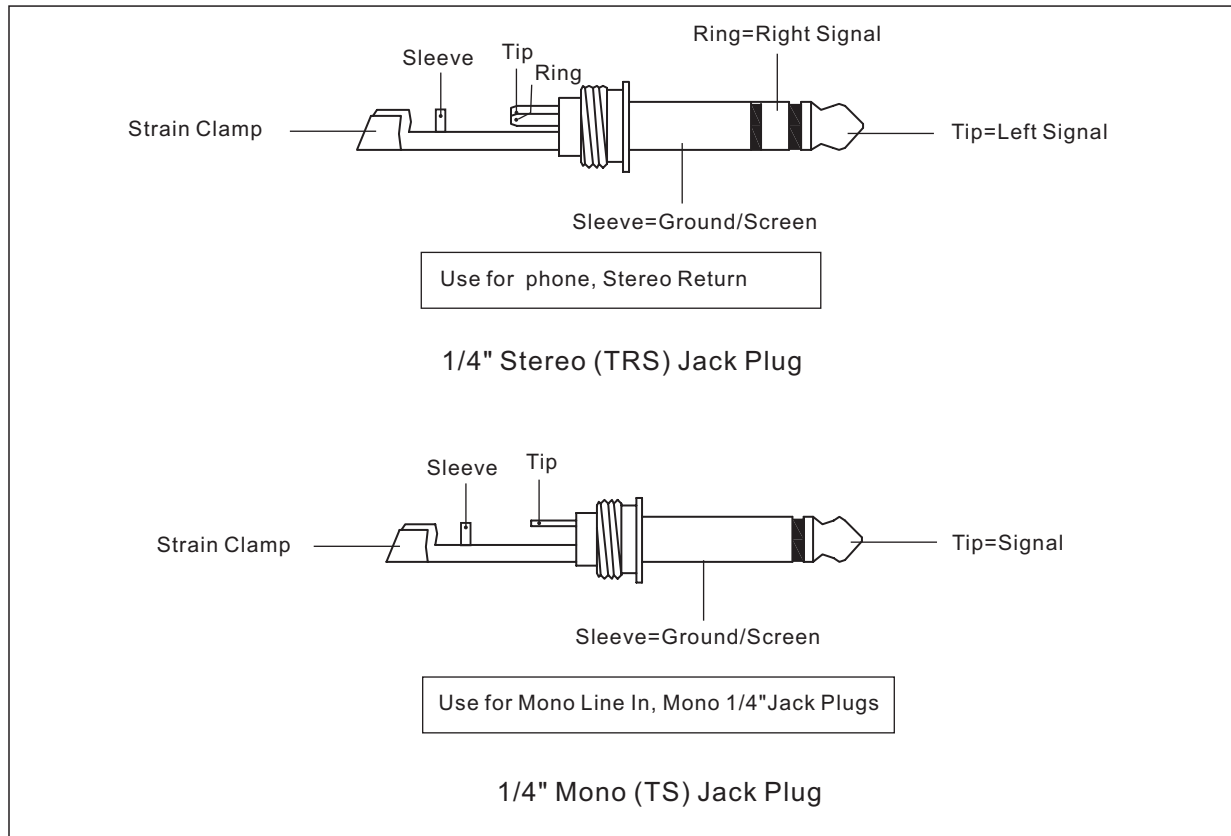
5. INSTALLATION AND CONNECTION

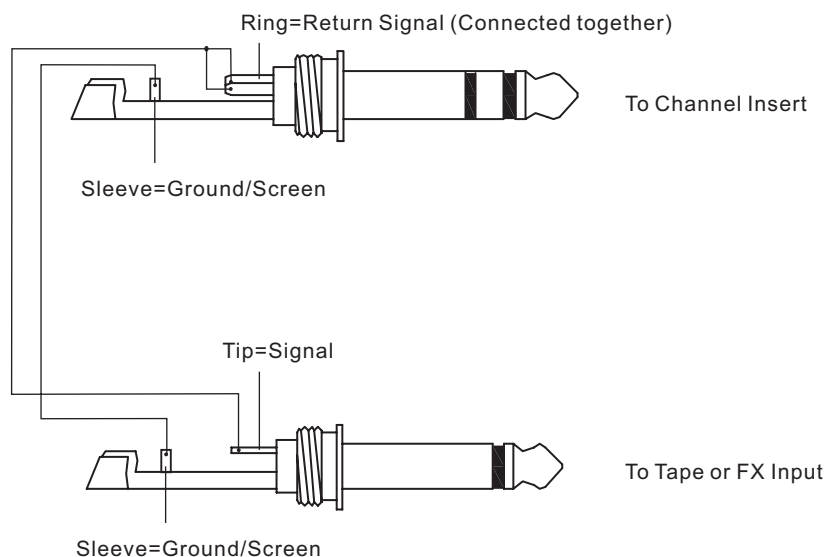
Ok, you have got to this point you are now in the position to successfully operate your PM-8 DRAGONFLY. However, we advise you to read carefully the following section to be the real Master of your own Mixer. Not paying attention enough to the Input signal level, to the routing of the signal and the assignment of the signal will result in unwanted distortion, a corrupted signal or no sound at all. So you should follow this procedure for every single channel:

- Turn down all Input and Output Gain Controls.
- Connect phantom powered microphones before switching on the +18Volt Phantom Power switch.
- If you have a power amplifier connected to your PM-8 DRAGONFLY set the Level of the amplifier at no more than 75%.
- Now, set the CONTROL ROOM / PHONES level at no more than 50%. In this way you will be able to hear later what you are doing connecting a pair of phones or a pair of powered studio monitor speakers.
- Position HI, MID and LOW EQ controls on the middle.
- Position panoramic (PAN) control on the center.
- With a phone or studio monitor speaker connected apply a Line Level input signal so that the PEAK Led does not light up.
- At this point increase the input gain so that the PEAK led will blink occasionally. In this way you will maintain good headroom and ideal dynamic range.
- Now connect a microphone and ask the singer to sing loud into the microphone. Turn slowly the Gain Control clockwise and have the PEAK Led blink only occasionally.
- Now repeat the same sequence for all input channels. The Main Led Meter could move up into the red section. In this case you can adjust the overall output level through the MAIN MIX control.

5.1 SOME FINAL TIPS ON WIRING CONFIGURATION

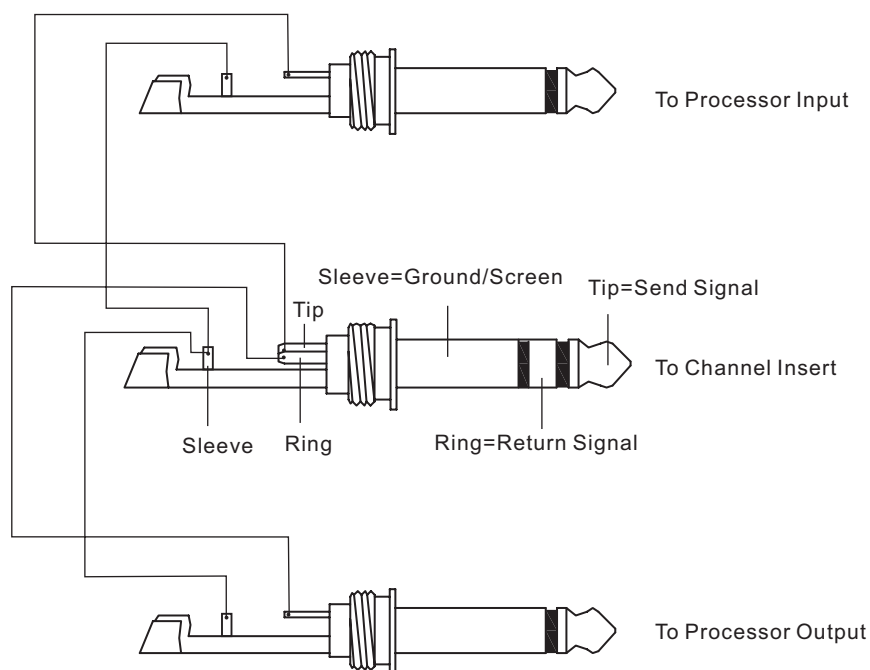
You can connect unbalanced equipment to balanced inputs and outputs. Simply follow these schematics.





'Tapped' Connection Direct Output Lead

(Enables the Insert to be used as a Direct Output while maintaining the channel signal flow)

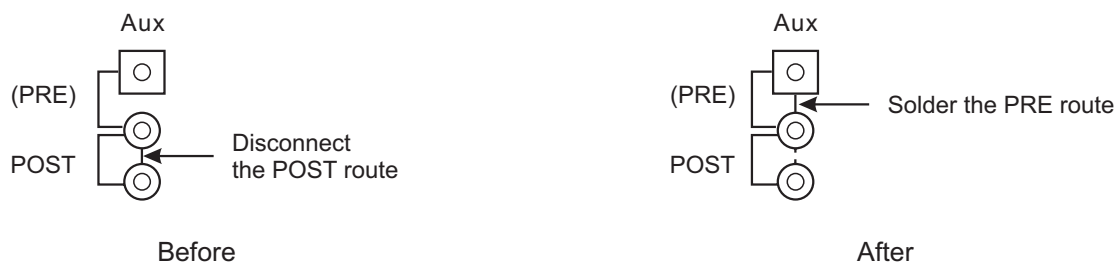


Y-Stereo lead for insert Connection

(To be used when the processor does not employ a single jack connection for the In/Out Connections)

6. FOR THE EXPERTS WHO WANTS TO KNOW MORE

As we have told you previously in this Manual, the Aux Send 2 Control both on Mono and on stereo channels is factory wired as POST-FADER. If you have some skill in electronic components soldering you can modify this setting and have all your AUX sends configured as PRE-FADER.

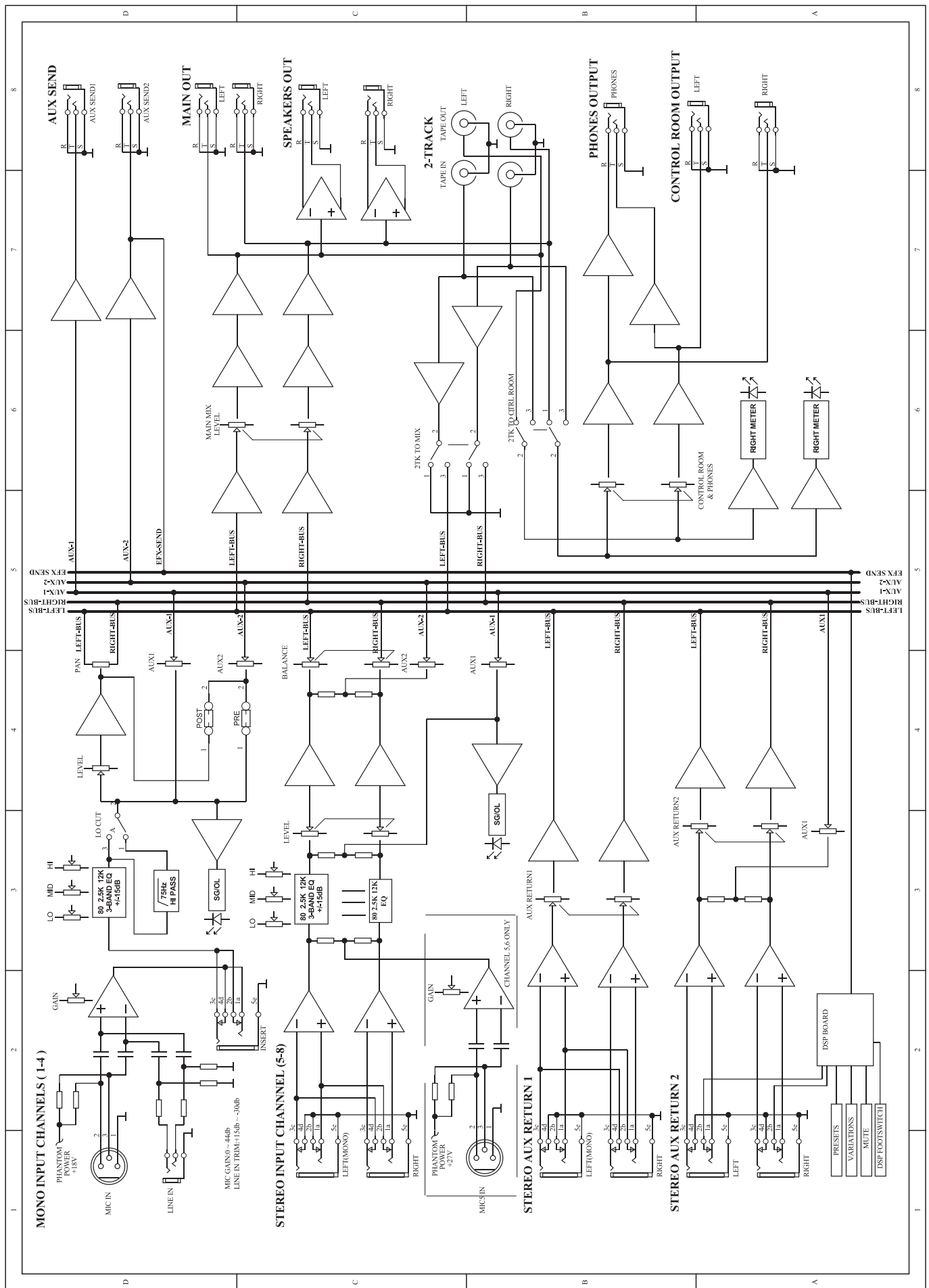


Modification on mono and stereo channels

7. PRESET LIST

No.	Preset	Description	Controllable	parameter
			Parameter	Variable range
1	VOCAL 1	Simulate a room with small delay time.	Decay time Pre-delay	0.8~1.1s 0~79ms
2	VOCAL 2	Simulate a small space with slight decay time.	Decay time Pre-delay	0.8~2.5s 0~79ms
3	LARGE HALL	Simulate a large acoustic space of the sound.	Decay time Pre-delay	3.6~5.4s 23~55ms
4	SMALL HALL	Simulate a small acoustic space of the sound.	Decay time Pre-delay	1.0~2.9s 20~45ms
5	LARGE ROOM	Simulate a studio room with many early reflections.	Decay time Pre-delay	2.9~4.5s 23~55ms
6	SMALL ROOM	Simulate a bright studio room.	Decay time Pre-delay	0.7~2.1s 20~45ms
7	PLATE	Simulate the transducers sound like classic bright vocal plate.	Decay time Pre-delay	0.6~6.1s 10ms
8	TAPE REVERB	Simulate a record head and multiple playback heads at intervals along the tape.	Decay time Pre-delay	1.3~5.4s 0~84ms
9	SPRING REVERB	Simulate the analog transducers' springs lightly stretched sound.	Decay time Pre-delay	1.3~5.4s 0~35ms
10	MONO DELAY	Reproduce the sound input on the output after a lapse of time.	Period	60~650ms
11	STEREO DELAY	Recreate the input sound on the stereo output with different time.	Period Feedback	210~400ms 37~73%
12	FLANGER	Simulate to play with another person carrying out same the notes on the same instrument	Rate	0.16~2.79Hz
13	CHORUS	Recreate the illusion of more than one instrument from a single instrument sound	Rate	0.5~5Hz
14	REV.+DELAY	Delay with room effect	Delay period Rev. decay time	211~375ms 1.0~2.9s
15	REV.+FLANGER	Stereo chorus and large room reverb	Flanger Rate Rev. decay time	0.16~2.52Hz 1.5~2.9s
16	REV.+CHORUS	Simulate the sound effect achieved by rotating horn speakers and a bass cylinder	Chorus rate Rev. decay time	0.5~4.74Hz 1.5~2.9s

8. BLOCK DIAGRAM



9. TECHNICAL SPECIFICATION

Mono input channels	Microphone input	electronically balanced, discrete input configuration
	Frequency response	10Hz to 55kHz, +/- 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
	Gain range	0dB to 44dB (MIC)
	SNR (Signal to Noise Ratio)	>100dB
	Line input	electronically balanced
	Frequency response	10Hz to 55kHz, +/- 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
	Sensitivity range	+15dBu to - 30dBu
Stereo input channels	Line input	unbalanced
	Frequency response	10Hz to 55kHz, +/- 3dB
	Distortion (THD & N)	0.005% at +4dBu, 1kHz
Impedances	Microphone input	1.4kOhm
	Channel Insert return	2.5kOhm
	All other inputs	10kOhm or greater
	Tape out	1kOhm
	All other output	120Ohm
Equalization	Hi shelving	+/- 15dB @12kHz
	Mid bell	+/- 12dB @2.5kHz
	Low shelving	+/- 15dB @80Hz
	Low Cut filter	75Hz, 18dB/oct.
DSP Section	A/D and D/A converters	24 bit
	DSP resolution	24 bit
	Type of effects	Hall, Room, Vocal & Plate REVERBS
		Mono & Stereo DELAY (max DELAY TIME 650ms)
		Chorus, Flanger & Reverb MODULATIONS
		REVERB+DELAY, REVERB+CHORUS, REVERB+FLANGER combinations
	Presets	256
	Controls	16-position PRESET Selector
		16-position VARIATION selector
		CLIP LED
		MUTE SWITCH with LED indicator
Main Mix Section	Noise (Bus noise)	Fader 0 dB, channels muted: - 100dBr (ref.: +4dBu)
		Fader 0dB, all input channels assigned
		and set to UNITY gain: - 90dBr (ref.: +4dBu)
	Max output	+22dBu balanced XLR.
		+22dBu unbalanced, 1/4" jacks
	AUX Return gain range	OFF to +15dB
Power AMP section	Power AMP output	RMS: 2x 225W @4Ohm
		EIAJ: 2x 221W @4Ohm
		Dynamic Power: 2x 480W @4Ohm
Power supply	Main voltage	USA/Canada 100 - 120V~, 60Hz
		Europe 210 - 240V~, 50Hz
		U.K./Australia 240V~, 50Hz
	Power Consumption	450 watts
	Fuse	100 - 120V~: T10A
		210 - 240V~: T6.3A
	Main connection	Standard IEC receptacle

Physical	Dimension (WxDxH)	290mmx250mmx100mm (11.41"x9.84"x3.93")
	Net weight(with power supply)	5.6Kg (12.35lb)
	Gross weight	6.2 Kg (13.67lb)

10. WARRANTY

1. WARRANTY REGISTRATION CARD

To obtain Warranty Service, the buyer should first fill out and return the enclosed Warranty Registration Card within 10 days of the Purchase Date.

All the information presented in this Warranty Registration Card gives the manufacturer a better understanding of the sales status, so as to purport a more effective and efficient after-sales warranty service.

Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your warranty service.

2. RETURN NOTICE

2.1 In case of return for any warranty service, please make sure that the product is well packed in its original shipping carton, and it can protect your unit from any other extra damage.

2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine, and give detail information about your return address and contact telephone number.

2.3 A brief description of the defect will be appreciated.

2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

3. TERMS AND CONDITIONS

3.1 ▲LTO warrants that this product will be free from any defects in materials and/or workmanship for a period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.

3.2 The warranty service is only available to the original consumer, who purchased this product directly from the retail dealer, and it can not be transferred.

3.3 During the warranty service, ▲LTO may repair or replace this product at its own option at no charge to you for parts or for labor in accordance with the right side of this limited warranty.

3.4 This warranty does not apply to the damages to this product that occurred as the following conditions:

- Instead of operating in accordance with the user's manual thoroughly, any abuse or misuse of this product.
- Normal tear and wear.
- The product has been altered or modified in any way.
- Damage which may have been caused either directly or indirectly by another product / force / etc.
- Abnormal service or repairing by anyone other than the qualified personnel or technician.

And in such cases, all the expenses will be charged to the buyer.

3.5 In no event shall ▲LTO be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws, you may also have other statutory rights that may vary from state to state.

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